REMARKS

Claims 1-31 are currently pending in the application. By this amendment, claims 1-20 are amended and claims 21-31 are added for the Examiner's consideration. Attached hereto is a separate sheet entitled "Marked-Up Copy of Claims" showing a marked up copy of the amended claims. Support for the amendment(s) and added claims 21-31 is provided in at least Figures 3 and 4 and at pages 3 and 4 of the present specification and the claims as originally filed. No new matter is added. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

§112, 2nd Paragraph, Rejection

Claims 1-20 were rejected under 35 U.S.C. §112, 2nd paragraph. Claims 1-20 have been amended in order to overcome this rejection. Applicant now requests withdrawal of this rejection.

Prior Art Rejection

Claims 1-20 were rejected under 35 U.S.C. §103(a) over Austria reference 405,560 in view of any of Schied or Nemeth or German reference 3,117605 or German reference 29703962 when considering either of Fritz or Roesch et al. This rejection is respectfully traversed.

The present invention is directed to a configuration for connecting flat components (e.g., flooring panels) of relatively slight thickness along their narrow circumferential sides. The components include a tongue and groove mechanism which includes accompanying protrusions and recesses locking mechanisms for locking the tongue with the groove. The components employ an adhesive to glue the components together. The adhesive, pre-applied at the factory, eliminates the laborious application of glues to the components on site. This also assures that the intended quantity of glue is always precisely maintained. Depending on the particular embodiment, the adhesive may be either applied along the surface of the groove, the tongue or

both. Also, two part component adhesives are also contemplated by the present invention. Several other types of adhesives are contemplated by the present invention.

It is further noted in the "Summary of the Invention" section that

> [t]he invention is based on the preliminary application of glue to those groove or tongue areas belonging to interlocking tongue and groove connections, which areas are pressed together when the tongue is automatically drawn into the groove and are fixed in this position by the interlocking connection. This renders superfluous any additional fixing means for holding the components together during the setting phase; this gives automatically a secured connection. (Emphasis added.)

Referring now to the paragraph spanning pages 3 and 4 of the specification, panels provided with glue -- whether the glue is active in advance or becomes active when the panels are joined on site -- have the benefit that the number of maneuvers and manual stages involved in laying out the panels on site is considerably reduced and in that the step regarded as time-consuming and unpleasant by both the professional and the amateur working at home is eliminated; namely, eliminating the application of glue in a uniform manner, but not an excessive quantity over the entire side length of the groove and/or tongues of the panel on the installation site. This eliminates the problem of the glue setting prematurely during delays in the laying process, such as makes impossible a practically seamless joining. Also eliminated is the unpleasant welling out of excess glue, which must be removed immediately after having left the joints so as to avoid the formation of spots on the decorative layer.

To establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), three basic criteria must be met.

> "First, there must be some suggestion or motivation, either in the references themselves or in knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or

> references when combined) must teach or suggest all of the claimed limitations.
>
> The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not applicant's disclosure." (emphasis added).

Applicant submits, however, that there is no motivation provided by any of the references or by one of ordinary skill in the art to combine the references in order to achieve the claimed invention. Applicant further submits that there is no suggestion in any of the references that there would be a reasonable expectation of success in combining the references to achieve the objectives of the present invention; namely, the elimination of excessive glue.

First, Austria reference 405,560 is directed to tongue and groove flooring panels which have a locking mechanism. In this reference, the groove sides, or one of the two sides, diverges away from the groove base and converges at the end away from the groove, at an angle that is larger than the angle of divergence. The opening width of the groove is greater than the front area (viewed along the line of insertion) of the tongue, which, proceeding from this front area, exhibits wedge-shaped areas that diverge at the same angle as the groove sides. The wedge-shaped area, in conformity with the groove cross-section, exhibits an undercut in the back area of the tongue, with border areas that are adjacent to the wedge-shaped areas and that converge at the same angle as the groove side, to form a connecting bridge to the component. After the groove has been inserted, the projection furnished with the converging groove sides snaps into the undercut of the tongue, while the converging groove side area slides along the wedge-shaped areas leading to the connecting bridge and thereby draws the tongue into the groove. In this reference, the projection which snaps into the undercut of the tongue locks the adjacent panels to one another without any need for glue or other adhesives; that is, this reference does not contemplate the sue of glue since there is a locking mechanism thus making the use of glue superfluous.

Now, on the other hand, Nemeth is directed to a floor tile which does not have any locking mechanism. Instead, this reference shows a beveled angular projection which engages with a cut groove. When two tiles are joined together a gap is defined between the tiles which can accommodate glue therebetween. This design serves to minimize the amount of glue exuding from between the tiles. (Col. 3, lines 12-16.) However, Applicant submits that there is no suggestion in this reference to use a glue in a panel that has a locking mechanism. The only suggestion within this reference is to use a glue with a conventional type tongue and groove mechanism (i.e., beveled angular projection and cut groove). Applicant thus argues that the Nemeth reference would not provide any motivation for one of ordinary skill in the art to use the glue in a flooring panel which has a locking mechanism integrated with the tongue and groove system, such as that in Australian reference 405,560.

Scheid also uses a conventional tongue and groove mechanism for wall or ceiling panel construction. In this application, nails or other fastening devices are used to hold adjoining panels. Because conventional tongue and groove mechanisms, without any locking mechanisms, are used by Scheid, it is thus necessary to use glues in order to hold the adjacent panels together. Thus, the only suggestion within this reference is to use a glue with a conventional type tongue and groove mechanism. The Scheid reference would not provide any motivation for one of ordinary skill in the art to use glue in a flooring panel which has a locking mechanism integrated with the tongue and groove system, such as that in Australian reference 405,560.

Similarly, DE-29703962 U1 is directed to a conventional tongue and groove connection of panels, floor-boards, cover facings, and the like. In this conventional configuration, glue is necessary in order to lock the panels together (since there is no interlocking mechanism). In this reference, factory application of glue to areas is provided to areas that adjoin and run perpendicular to the surface and are provided in order to be positioned against the next paneling element. However, the disadvantage of this kind of design is that, due to the employed glue, the two surfaces that come into contact must be pressed together with a considerable degree of pressure, making it impossible to additionally adjust the glued joint in the longitudinal direction for the purpose of closing a transverse joint. Again, the only suggestion in this reference is to

use a glue in a conventional type tongue and groove configuration without any interlocking features designed therein. Accordingly, Applicant submits that there would be no motivation to one of ordinary skill in the art to use the glue of this conventional tongue and groove system in the Austria reference 405,560 which includes a locking mechanism integrated with the tongue and groove system.

Now, DE 3117605 A1 also shows a typical and well known tongue and groove joining mechanism. This reference does not show any interlocking mechanism to ensure that adjoining panels are locked together once joined. If one were to use glue or adhesive with this reference it is simply because this would be necessary in order to ensure that the panels remained joined together. There is no other locking mechanism to ensure that the panels remain together. But, again, there is no suggestion within this reference to use a glue in a flooring panel which includes a locking mechanism in conjunction with the tongue and groove. This would be superfluous. Applicant thus submits that there would be no motivation provided by this reference for one of ordinary skill in the art to use a glue with a panel which has a locking mechanism integral with the tongue and groove system.

It is further submitted that none of the applied references, discussed above, provide any reasonable expectation of success to make the claimed combination, other than that found in Applicant's own disclosure. For example, none of the references, in combination, would suggest the elimination of excessive glue from seeping from a tongue and groove system with an integrated locking mechanism. At best, Nemeth teaches a design which serves to minimize the amount of glue exuding from between tiles. But this reference does not address a groove and tongue design with a locking mechanism. This reference only includes a beveled tongue and groove system. Applicant thus argues that the Examiner is using impermissible hindsight reasoning based on Applicant's disclosure in order to achieve the benefits of the claimed invention.

Applicant further submits that the Austria reference does not even contemplate the benefits of using glue. This is the case since the Austria reference has a locking mechanism with the tongue and groove system. Accordingly, Applicant again submits that the Examiner is using

impermissible hindsight reasoning based on Applicant's disclosure in order to achieve the claimed invention based on the combined references. As discussed above, the use of the adhesive or glue of the present invention, pre-applied, ensures the elimination of excess glue as well as allowing the adjacent panels to be adjusted while having an additional securing means.

The Examiner further argues that each of Fritz and Roesch teach the utilization of various two part components. Although this may be true, Applicant submits that there is no suggestion or teaching in either of these references to use such two part components with a flooring panel system having an integrated locking mechanism. In fact, Applicant notes that the Fritz reference only discloses a two component external mix spray gun. Nowhere is there any suggestion in this reference for using this two component mix in a floor panel, much less one that is disclosed and claimed in the present invention. Applicant further submits that the Fritz reference is such a divergent art from the Austria reference 405,560 that one of ordinary skill in the art would not have any motivation to combine such references in order to achieve the claimed invention. In fact, trying to use the Fritz reference in combination with the Austria reference 405,560 to achieve the claimed invention would appear to be impermissible hindsight reasoning based purely on Applicant's disclosure.

As to Roesch, a micro encapsulated solvent adhesive composition for coupling conduits is disclosed. This reference, much like the Fritz reference, does not use such two part components with a flooring panel system. Nowhere is there any suggestion in this reference for using this two component mix in a floor panel, much less one that is disclosed and claimed in the present invention. Also, the Roesch reference is such a divergent art from the Austria reference 405,560 that one of ordinary skill in the art would not have any motivation to combine such references in order to achieve the claimed invention. In fact, Applicant again submits that using the Roesch reference with the Austria reference 405,560 to achieve the claimed invention is impermissible hindsight reasoning based purely on Applicant's disclosure.

Applicant lastly submits that these references do not even disclose all of the specific combinations of the components as recited in the claimed invention.

Added Claims

Applicant adds claims 21-31 for the Examiner's consideration. Claims 21-30 are dependent claims which depend from distinguishable base claim 1. Claim 31 is an independent claim which recites the locking structure integrated with the tongue and groove design in combination with the use of adhesives. As argued above, none of the applied references, in combination, show the features of an integrated locking structure with the use of adhesive.

Conclusion

In view of the foregoing amendments and remarks, Applicant submits that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 23-1951.

Respectfully submitted,

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Marked-Up Copy of Claims

The following is a marked-up copy of amended claims 1-20.

1. (Amended) A configuration for combining flat structural components of relatively low thickness along their narrow circumferential sides, where connecting members that interact on the tongue-and-groove principle are provided at the areas being connected, and the sides of the groove diverge from [the] a groove base and converge at [the] an end away from the groove base at an angle that is greater than [the] an angle of divergence, where [the] an opening width of the groove is greater than [the] a foremost area of the tongue in [the] a direction of insertion, which tongue exhibits wedge-shaped areas that diverge from front to back at the same angle as the sides of the groove, each of which wedge-shaped areas exhibits an undercut in [the] a back area of the tongue that conforms to the groove cross-section, while the undercut's borders, adjoining the wedge-shaped areas, converge at the same angle as the groove sides toward a connecting bridge [that is part of the component], a locking elements integrated into the tongue and the groove, wherein an adhesive layer, or a substance which activates an adhesive, is applied to the groove at least in the area of its divergent sides or to the tongue at least in the area of its divergent wedge-shaped area, or to both areas.

2. (Twice Amended) A configuration according to claim 1, [where] wherein:

the locking elements are on at least one side of the groove and at least one side of the tongue, the locking elements [that] conform to each other and [ideally] extend over the entire length of the groove and the tongue are provided in the form of an indentation or recess[, or in the form of] and a projection, in order to hold connected components in a joined position; [and where]

the groove is formed directly in the component [itself,] or is worked out of the same[,] in order to provide for [the solid] a connection of the components;

the [particularly heavy] tongue forms a single piece with the component or is worked out of the same;

[the] a width of the groove increases from inside outward;

[the] a thickness of the tongue decreases in the direction of [its] an unattached end;

the projection on the tongue is triangular and exhibits a shorter back [area] surface and a longer front surface [that with the surface of the components encloses an angle that exceeds the angle [sic]];

the recess in the groove exhibits a shorter contact surface that lies at a distance from the groove base and that rests against the shorter[,] back surface of the projection;

at least one[, and ideally both,] of the two groove sides [can] flex elastically and outwards relative to the other groove side[,] so that in a locked position the tongue is held by the groove sides with a squeezing action or [can be] is inserted into the groove while the groove sides bend elastically; [and the]

an angle between the [two triangle sides or between] longer front [tongue area] surface and the shorter back [tongue area] surface is 1000 to 1400[, particularly 1100 to 1300];

[where the] two legs of the groove are equally as long as the respective longer front surface and the shorter back surface;

[where] the recess in the groove exhibits a contact area close to the groove base that in [locking] the locked position at least partially rests against the longer front surface; [where]

the [triangle side] longer front surface close to the groove base, or the section of the tongue area received by the recess, is four to eight times[, ideally five to seven times,] as long as the [triangle side distant from the groove base or the] shorter back [area] surface; and [where]

the tongue is provided with [a] the layer of adhesive or with [an] the adhesive with an activating substance on at least the contact surface of the groove walls close to at least one of the groove base [and/or] and on the longer front [area] surface of the tongue.

3. (Twice Amended) A configuration according to claim 1, wherein:

the grooves of the individual panels[, specifically at least one of the lateral groove areas,] are provided with a filling, coating, covering or strand, comprising a latent adhesive material that becomes active after appropriate activation, and

the tongues[, specifically at least one of their side areas, is] are provided with a coating or surface impregnation, a covering or strand [if so desired,] is applied to the panels and moistens them shortly before they are joined together and comprises an activator which induces adhesion.

4. (Twice Amended) A configuration according to claim 1, wherein:

the grooves of the panels[, specifically at least one of their lateral areas, is] are provided with a filling[, specifically a coating,] comprising [an] the adhesive or glue that is stabilized by [the] removal of a solvent or a dispersion agent[, particularly water,] but that can be reactivated upon contact with [a] the solvent[, particularly water or water moisture,], and

the tongues of the panels[, specifically at least one of their lateral areas,] are provided with a film or covering that is applied or sprayed on before the panels are joined together and that [covers, or] at least moistens[,] said tongues, or with a surface impregnation comprising [a] the solvent or dispersing agent[, particularly water,] which serves as an activator for the adhesive or glue.

5. (Twice Amended) A configuration according to claim 1, wherein:

the grooves of the panels[, specifically at least one their lateral areas,] are provided with a filling[, specifically a coating,] comprising a dispersion glue that is stabilized by the removal of water, but that can be reactivated upon contact with a solvent[, particularly water or water moisture,] and [particularly] comprising a fast-binding and mounting glue on a polyvinyl acetate base.

6. (Twice Amended) A configuration according to claim 1, wherein:

the grooves of the panels[, specifically at least one of their lateral areas,] are coated with an initial component[, specifically with the unhardened or not fully hardened resin component] of a two-component [polymerization] glue, and

the tongues[, specifically at least one of their lateral areas,] are coated with [the] a second component[, specifically the hardener component,] of said two-component glue, or vice versa.

7. (Twice Amended) A configuration according to claim 1, wherein:

the grooves or the tongues of the panels[, in particular at least one of their lateral areas,] are coated with [the] a second component[, specifically the hardener component,] applied in the course of manufacturing the panels[,] of a two-component polymerization glue, in a form of a hardener varnish, and with a first component[, specifically the resin component,] which is applied to the [hardener] second component[, specifically the hardener varnish,] before the panels are laid.

8. (Twice Amended) A configuration according to claim [6] 7, wherein the [hardener component of the two-component glue, specifically the] hardener varnish[,] has an organic peroxide as its base and the first component is a resin component [to be hardened with said varnish] which has a methyl acrylate base.

9. (Twice Amended) A configuration according to claim [6] 7, wherein the [hardener component of the two-component glue, specifically the] hardener varnish[,] has an aliphatic or cycloaliphatic polyamine as its base and [its] the resin component is based on at least one of an epoxide and[/or] bisphenol A and[/or] bisphenol F resin.

10. (Twice Amended) A configuration according to claim 1, wherein the adhesive is a micro-encapsulated adhesive and at least one of [the] lateral areas of the groove belonging to the panels [and/or] and at least one of [their] the tongue lateral areas is provided with a coating or strand with [a] the micro-encapsulated adhesive that is immediately active.

11. (Twice Amended)A configuration according to claim 10, wherein the micro-encapsulated adhesive takes the form of a two-component adhesive with a mixture of a micro-encapsulated resin component[, for example, with a methylacrylate base,] and a micro-encapsulatd hardener component[, for example, with a peroxide base].

12. (Twice Amended) A configuration according to claim 1, wherein the adhesive is a two-component adhesive and at least one of [the] lateral groove areas of the panels is provided with a coating or with a strand of [the] micro-encapsulated resin component of [a] the two-component adhesive and at least one of [the] lateral tongue areas that interacts with said coated lateral groove area is provided with a coating, or film or strand[,] of [the also] a micro-encapulated hardener component of said two-component adhesive, or vice versa.

13. (Twice Amended) A configuration according to claim 1, wherein the adhesive is a two-component adhesive and at least one of at least one of [the] lateral groove areas and[/or] at least one of [the] lateral tongue areas is provided with a coating or a film of micro-capsules that are dispersed in a matrix of [the] a hardener component of [a] the two-component adhesive and that contains [the] a resin component of the same adhesive, or of micro-capsules dispersed in a matrix of the resin component and containing the hardener component.

14. (Twice Amended) A configuration according to claim 1, wherein the adhesive is a lastingly sticky and permanently active adhesive glue which is covered or coated on at least one of the grooves of the panels[, specifically at least one of their lateral areas,] and[/or] the tongues[, [specifically at least one of their lateral areas, are covered or coated with a lastingly sticky and permanently active adhesive glue, particularly a molten adhesive glue].

15. A configuration according to claim 14, wherein the [grooves of the panels, specifically at least one of their lateral areas, and/or the tongues, specifically at least one of their lateral areas,

are coated with a] lastingly sticky and permanently active adhesive glue[, particularly a molten adhesive glue, that] exhibits viscosity values between 15,000 and 1500 centi-poise at temperatures between 140 and 170 C and is applied at temperatures in the indicated range[, preferably in the range between 145 and 155 C].

16. (Twice Amended) A configuration according to claim 14, wherein the [grooves of the panels, specifically at least one of their lateral areas, and/or the tongues, specifically at least one of their lateral areas, are coated with a] sticky and permanently active adhesive glue[, particularly a] is molten adhesive glue.

17. (Twice Amended) A configuration according to claim 1, wherein at least one of the grooves of the panels[, specifically at least one of their border areas,] and[/or] the tongues[, specifically at least one of their border areas,] are provided with the adhesive which is an integral adhesive strand exhibiting a core strand of a lastingly sticky and permanently active adhesive glue and a polymer cladding strand that surrounds said core strand on all sides, prevents the diffusion of water or any adhesive solution or dispersion agent, and [can be] is destroyed by the action of pressure and shearing forces exerted when the panels are brought together, where the core strand is formed with an active adhesive or glue with setting properties that is prepared with at least one of water and[/or] a dispersion agent or solvent[, particularly wood glue,] on at least one of a synthetic polymer base, [on of] a polyvinyl acetate base, and[/or] on a biopolymer base, on at least one of a starch and protein base.

18. (Amended) A configuration according to claim 17, wherein the cladding strand for the adhesive or cement strand is formed with a flexible polymer material that is adhesive relative to the material of the panel, at least upon application of the integral adhesive strand, and that [ideally] will set rapidly, and [preferably with a synthetic rubber, specifically] with butyl rubber[,] or with a two-component or moisture-linking polyurethane rubber mass.

19. (Twice Amended) A configuration according to claim 17, wherein at least one of the grooves[, specifically at least one of their lateral areas,] and[/or] the tongues[, specifically at least one of their lateral areas,] are provided with the adhesive which is an integral adhesive strand that exhibits a cross-section with the shape of a flattened dome.

20. (Twice Amended) A configuration according to claim 1, wherein [the] a coating of the grooves of the panels[, specifically of at least one of their lateral areas, with] is an adhesive that is stabilized by [the] removal of water but can be (re-)activated upon contact with water or water moisture and exhibits a basically uniform layer thickness in the range from 0.1 to 0.4[, specifically 0.15 to 0.25 mm,] with thickness tolerances in the range of 0.05 mm.